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Remarks

Thorough examination by the Examiner is noted and appreciated.

The claims have been amended to further clarify Applicants disclosed and claimed invention.

Support for the amendments is found in the original claims, the Figures (see Figure 1) and the Specification, e.g., paragraphs 0022 and 0023:

"Fig. 1 also shows an electrical probe tip 16 movably positioned with respect to the microelectronic product 14 and the electrical test head 12 such as to electrically stress a portion of the microelectronic product 14 other than an electrical contact portion (i.e., bond pad portion or patterned conductor layer portion) of the microelectronic product 14. The electrical stress provided to the microelectronic product 14 through the electrical probe tip 16 may be provided employing either a positive bias or a negative bias. Typically, a bias voltage is in a range of from about +/- 3 to about +/- 5 volts.

The electrical test apparatus 10 still further comprises a controller 18 that is intended to control the movement of the electrical probe tip 16 and to coincidentally collect electrical test data from the electrical test head 12 at such times when the electrical probe tip 16 is electrically biased with respect to the microelectronic product 14."

No new matter has been added.

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Claim Objections

Examiner argues that the amended claims including the language "a movable electrical probe tip **separated from said electrical test head**" is unclear and further argues "there is no support in the Specification to indicate that the electrical probe tip is separate from the test head". Applicants respectfully point out that Examiner misinterprets the clear language and drawings of Applicants disclosure. Examiner argues that the electrical probe tip is connected to the test head and then connected to the tester in order to supply the test signal from the tester to semiconductor devices or electrical probe tip connected to semiconductor devices then detect the output signal from semiconductor devices then transmit the output signal to the tester for analyzing. Either way the electrical probe tip is part of the test head."

Applicants respectfully point out that Applicants clearly show in Figure 1 that the "electrical test head" (12) and electrical probe tip (16) are separately connected to a

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controller (18) and the electrical probe tip is separately position with respect to the electrical test head (see Figure 2).

Thus Applicants fail to understand Examiners objection, and do not disclose or claim what Examiner asserts. Both the electrical probe tip (16) and the electrical test head (12), controller (18) and user interface (2) are part of the **electrical test apparatus** (10). See e.g., paragraph 0025:

"The electrical test apparatus 10 still further comprises a controller 18 that is intended to control the movement of the electrical probe tip 16 and to coincidentally collect electrical test data from the electrical test head 12 at such times when the electrical probe tip 16 is electrically biased with respect to the microelectronic product 14."

Thus Applicants fail to understand Examiners objection or language i.e., Applicants nowhere disclose or claim a "tester" or nowhere disclose or claim the operation of the device as Examiner has stated "the electrical probe tip is connected to the test head and then connected to the tester in order to supply the test signal from the tester to semiconductor devices or electrical probe tip connected to semiconductor devices then detect the output signal from semiconductor devices then transmit the output

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signal to the tester for analyzing. Either way the electrical probe tip is part of the test head."

Nevertheless in an effort to further prosecution on the merits, Applicants have further amended the claims to further clarify Applicants invention in an attempt to overcome Examiners objection.

**Claim Rejections under 35 USC 102**

1. Claims 1-6, 8-13, 15-18 and 20 stand rejected under 35 USC Section 102(b) as being anticipated by Ishii et al. (US 5,493,236).

Ishii et al. disclose a test analysis apparatus for optical beam induced current (OBIC) and luminous analysis from a rear surface of a semiconductor wafer (see Abstract). In the method and apparatus of Ishii a test pulse signal is supplied to respective **electrode pads (electrical contact portions)** on the front surface of the wafer (see Abstract; col 6, lines 43-47; lines 56-64; col 7, lines 4-31)) **to actuate the semiconductor wafer circuitry** while at the same time attempting to detect a

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current generated in the circuitry from a defective portion of the circuitry (e.g., P-N junctions col 2, lines 55).

**Simultaneously the semiconductor wafer is irradiated from the rear side** and any luminosity from the semiconductor wafer is detected (see col 3, lines 43-60; col 4, lines 19-28).

Thus Ishii et al. fails to disclose several aspects of Applicants disclosed and claimed invention including:

**"a movable electrical probe tip separately positionable with respect to the electrical test head during testing such as to electrically stress a portion of the microelectronic product other than an electrical contact portion of the microelectronic product while said electrical test head is simultaneously positionable to electrically contact said electrical contact portion to produce electrical test data for said microelectronic product."**

Ishii et al. fail to disclose anywhere **an electrical probe tip** as Applicants have disclosed and claimed.

In clear contrast to Applicants disclosed and claimed

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invention, Ishii et al. disclose a probe tip that is **part of a test head** (electrical test head) that is **not separately positionable during testing** and further where the electrical probe tip is positioned to apply an electrical voltage to an **electrical contact portion (electrode pads)** to actuate a semiconductor device.

Examiner refers to col 6, lines 56-67, where Ishii et al. teach that an electrical test pulse signal is applied (by pogo pin 45C, Fig. 4) **to electrical pads (electrical contact portions)** "in order to place the chip in actual operating condition, **instead of the conventional ordinary bias voltage**". Thus, Ishii et al. disclose an apparatus and testing method that works by a different principle of operation than Applicants disclosed and claimed invention.

Examiner also refers to col 7, lines 1-31 where Ishii et al. explain that the test head (40b; Figure 4) is connected to the probe card (44) through performance board (41) which is in contact with the pogo pin (40c). Thus, Ishii et al. **makes clear that both the test head 40b and the pogo pin are stationarily positioned (connected to an electrical contact portion**

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(electrical pads on the test wafer) during testing (col 7, lines 1-15

Ishii et al. is clearly insufficient to anticipate Applicants disclosed and claimed invention as claimed in both Applicants independent claims and dependent claims.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Further, with respect to claims 9 and 16, nowhere do Ishii et al. disclose:

"sequentially movably positioning the electrical probe tip to sequential positions comprising said other than an electrical contact portion of the semiconductor product and

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electrically stressing the microelectronic product with said electrical probe tip while simultaneously electrically testing the microelectronic product with said electrical test head contacting said electrical contact portion to produce said electrical test data for said microelectronic product."

Claim Rejections under 35 USC 103

2. Claims 7, 14, and 19 stand rejected under 35 USC Section 103(a) as being unpatentable over by Ishii et al., above, in view of Ohno et al. (US 5,091,662).

Applicants reiterate the comments made above with respect to Ishii et al.

Ohno et al., like, Ishii et al., also teach **applying a test signal to electrode pads (electrical contact portions)** with a plurality of test probes (see Abstract) where the object of the invention is to provide a wafer probing test machine capable of **positioning the electrical probes on the pads (electric contact**



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**portions) with higher accuracy** (see Abstract; col 7, lines 40-59). Thus, Ohno et al, also disclose an apparatus and method that works by a different principle of operation that Applicants disclosed and claimed invention.

Thus, even assuming arguendo, a proper motivation for combining the teachings of Ishii et al. and Ohno et al., The fact that Ohno teaches an apparatus "where the electrical probe tip and the radiation beam are on the same side of the microelectronic product" as Examiner alleges, does not produce Applicants disclosed and claimed invention.

Moreover, the combined teachings Ishii et al. and Ohno et al. could not accomplish Applicants disclosed and claimed invention:

**"An apparatus for electrically testing a microelectronic product while moveably applying an electrical stress "**

"Finally, the prior art reference (or references when combined) must teach or suggest **all the claim limitations**. The

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teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

"Finally, when evaluating the scope of a claim, every limitation in the claim must be considered. Office personnel may not dissect a claimed invention into discrete elements and then evaluate the elements in isolation. Instead, the claim as a whole must be considered." See, e.g., *Diamond v. Diehr*, 450 U.S. at 188-189, 209 USPQ at 9.

#### Conclusion

Since the cited references, singly or in combination, fail to produce Applicants disclosed and claimed invention, such references fail to make out a *prima facie* case of anticipation or obviousness with respect to both Applicants independent claims and dependent claims.

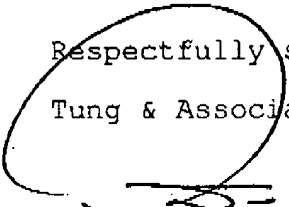
Based on the foregoing, Applicants respectfully submit that the Claims are now in condition for allowance. Such favorable action by the Examiner at an early date is respectfully solicited.

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In the event that the present invention as claimed is not in a condition for allowance for any other reasons, the Examiner is respectfully invited to call the Applicants' representative at his Bloomfield Hills, Michigan office at (248) 540-4040 such that necessary action may be taken to place the application in a condition for allowance.

Respectfully submitted,

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